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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,074	02/11/2004	Minoru Miyatake	021365A	3309

38834 7590 04/07/2006

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EXAMINER	
ZIMMER, MARC S	

ART UNIT	PAPER NUMBER
1712	

DATE MAILED: 04/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/775,074	MIYATAKE ET AL.	
	Examiner	Art Unit	
	Marc S. Zimmer	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,6-9 and 23-27* is/are rejected.

7)☒ Claim(s) *3-5,10-22 and 28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 10/271,528.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *02/11/04*. ✓ 11/9/05
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Analysis

It is noted for the record that product-by-process language is used both in the disclosure of component (A) and of component (B) of the instant invention. "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process" *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). That is to say, the claimed film is anticipated/rendered obvious by a reference teaching a coating composition comprising materials (A) and (B) though they might have been prepared using a different synthetic strategy e.g. chlorosilanes as precursors in lieu of alkoxysilanes.

Applicant is further advised that where one of the transitional phrases conventional in U.S. patent practice is not employed, it will be considered that the claim is open-ended as though the phrase "comprising" had been intended. For instance, component (B) is said to have been obtained by polymerizing a compound having a "perfluoroalkyl structure", ostensibly a silane bearing perfluorinated hydrocarbon substituents, and a non-fluorinated alkoxysilane. Because there is no express indication that these are the only materials contributing to the structure of (B), it will be considered that other compounds may be employed in its preparation.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It makes no sense to say that a compound having perfluoroalkyl structure is non-fluorinated. It is believed, instead, that it had been Applicant's intent for $Si(OR)_4$ to be exemplary of the hydrolyzable non-fluorinated alkoxysilane.

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-2, 6-9, and 23-27 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Akamatsu et al., U.S.

Patent Application Publication No. 2003/0077457. They describe articles (vehicular window panes, mirrors, etc.) to which is applied an inventive hydrophobic coating composition (paragraph 1). Relevant to the claims, it is contemplated in paragraph 85 that a metal oxide layer, e.g. silicon oxide, may be interposed between the substrate and hydrophobic film wherein the silicon oxide layer may be equated with the hard coat of claim 1. The hydrophobic film-forming composition is disclosed in paragraph 12 and includes a silica matrix equivalent to siloxane oligomer (A)- see the description for its preparation in paragraph 22- and an alkoxy group-terminated polydimethylsiloxane.

In paragraphs 41 to 50, there is taught a method of preparing a coating liquid that entails reacting the aforementioned dimethylpolysiloxane with an alkoxysilane bearing fluoroalkyl groups. It is this product that the Examiner considers to be equivalent to compound (B) of Applicant's invention insofar as it indeed would have both perfluoroalkyl structure and polysiloxane structure. After its formation, it is combined with the silica matrix and applied to a surface and dried.

Concerning claim 2, the dimethylsiloxane component, which has fluoroalkyl structure in at least one embodiment, is combined with the silica matrix as 1 to 200 wt.% as a fraction of the amount of the silica matrix added.

Concerning claims 6 to 9, the term optical element is fairly vague and embraces a multitude of articles of manufacture. In any case, certainly mirrors are within the purview of an optical article.

Claims 1-2, 6-9, and 23-27 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Narisawa et al., U.S.

Patent # 6,403,225. Narisawa et al. disclose an invention much like that described by *Akamatsu*. In particular, they describe in a second embodiment of their invention a liquid coating composition comprising a silicone having a hydrolyzable group at one end and fluoroalkyl group at the opposite end (sse column 4, lines 38-52), a silica precursor sol, an acid, and water (column 1, lines 47-54). It is contemplated that an underlayer derived from a hydrolyzable silane is formed on the surface of a substrate and the hydrophobic topcoat is applied thereafter (column 2, lines 21-48). The silica precursor is added in a ratio of up to 0.1:1 in the second embodiment of the invention (column 4, lines 1-4).

Concerning claims 24-27, whether this limitation is satisfied or not ultimately depends on the value of "n" in the formulae recited in column 4, lines 38-42. The reference says only that "n" is preferably greater than 13 so as to provide a molecular weight of greater than 1000. Provided that "n" is less than 100, this limitation is obviously met.

Allowable Subject Matter

Claims 3-5, 10-22, and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. No hard coat layer other than those comprising metal/silicon oxides are contemplated. In light of the stated application of the formulations taught by these references, it is not clear why it would be anything more than "obvious to try" applying the prior art compositions mentioned herein

to a visual display (and only then because they resemble somewhat other antireflective compositions taught by the prior art.).

There are mentioned in the prior art other antireflection films derived from perfluorinated polysiloxane resins. See, for instance, Nogami et al., U.S. Patent # 5,800,926 and Sato et al., U.S. Patent # 6,558,804. However, the resins are not combined with a compound equivalent to (A). Rather, a perfluorinated alkoxysilane is copolymerized with an orthosilicate, this as opposed to an orthosilicate being reacted to form an oligomer and then combining that product with a polymer derived in part from a perfluorinated alkoxysilane.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc S. Zimmer whose telephone number is 571-272-1096. The examiner can normally be reached on Monday-Friday 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 3, 2006

MARC S. ZIMMER
PRIMARY EXAMINER